DEPARTAMENTO DE ECONOMIA
UNIDAD DE INVESTIGACIONES

SERIE DE ENSAYOS Y MONOGRAFIAS : NUM. 50

LONG-RUN EXPENDITURE CONSTRAINTS IN ARGENTINA

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Diciembre, 1988

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RIO PIEDRAS, PUERTO RICO

ABSTRACT

This article attempts to identify and empirically assess the economic, monetary, financial, and institutional/political factors associated with the behavior of Argentine public expenditures over the 1930-1977 period. Using multiple regression techniques and functional and economic classifications of government spending, explanations are sought regarding the constancy of the secular overall expenditure to GDP ratio and with respect to the changing composition of total outlays. Real per capita GDP and deficit financing exerted an upward pull on the expenditure/GDP ratio, whereas tax revenue constraints and nonelected governments operated in the opposite direction.

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In both developed and developing countries the twentieth century has generally witnessed growth in the relative size of the public sector. The increasing importance of government expenditures as a proportion of gross product has been especially notable in industrialized nations following the decade of the 1920s and the developing countries after World War II. Moreover, this phenomenon has almost universally occurred regardless of the nature of the political or economic system adopted.

The case of Argentina appears to represent an exception to the general rule. Over the nearly half century between 1930 and 1977, the expenditures of the Argentine general government (national, provincial, and municipal levels) comprised a fairly steady one-fifth to one-quarter of gross product, despite some significant changes in the composition of that total expenditure. Naturally, there were short-term fluctuations around this expenditure share, especially those associated with the populist Peronist administrations (see Appendix), but such variations were soon damped. The inclusion of the capital spending of the myriad state enterprises does not alter this conclusion.[1/]

Such stability is rather curious, for it was maintained in the face of abrupt and significant political changes that ran the gamut from civilian to military regimes and from conservative to developmental to populist administrations. Adding to this quasienigma is Argentina's place in economic development history, for just prior to 1930 its per

capita gross product placed it as one of the more developed nations of the world (see Díaz Alejandro, 1970). No outstanding supply-side barriers to growth appeared to be present, natural and human resources were bountiful and of high quality, and the social and economic infrastructure was firmly in place. On this basis Argentina would have been expected to follow the same growth and general public expenditure patterns as its national western counterparts; that is, it would have been anticipated that Argentina's public sector would have significantly increased in proportional size subsequent to 1930.

It is the purpose of this article to carry out a multiple regression analysis of the economic, financial, and political/institutional factors associated with the behavior of Argentine public spending over the 1930-1977 period. Attention will be directed not only to an explanation of the overall expenditure-gross domestic product (GDP) ratio, but also to an analysis of those factors significantly linked to the changing composition of public spending. In order to achieve this latter objective, public expenditures have been disaggregated into economic and functional categories.[2/]

AN OVERVIEW OF EXPENDITURE BEHAVIOR: 1930-1977

Part A of Table 1 confirms the secular stability of relative public spending in Argentina over the period under study. Using both current and constant price concepts,[3/] it can readily be noted that general government outlays as a proportion of total expenditures on GDP demonstrated little upward trend over the entire interval; that the "peak" years coincide with the populist Peronist administrations (1946-1955 and 1973-1975) as expected.[4/]

TABLE 1

PUBLIC EXPENDITURE BEHAVIOR IN ARGENTINA, 1930-1977

A. General Government[a] Expenditures as a Proportion of GDP (at factor cost)

Period	Current Prices	Constant Prices[b]	Period	Current Prices	Constant Prices
1930/32	21.9	19.3	1954/56	24.4	25.1
1934/36	21.7	18.9	1959/61	22.7	22.3
1939/41	23 2	20.2	1964/66	21.8	21.4
1944/46	21.1	19 7	1969/71	23.3	20.4
1949/51	25.3	26.0	1975/77	24.4	23.2

B. General Government Expenditures by Economic Classification as a Proportion of Total Expenditure (current prices)

			C u r r e n t		
Period	Current	Capital	Goods & Services	Personal Transfers	Subsidies[c]
1930/32	85.0	15.0	55.4	7.3	37.3
1939/41	80.9	19.1	63.2	7.3	29.4
1949/51	69.8	30.2	64.9	16.5	18.6
1959/61	77.0	23.0	58.9	27.8	13.3
1969/71	79.8	20.2	58.5	35.6	5.9
1975/77	69.9	30.1	NA	NA	NA

C. National Government Expenditures by Functional Classification as a Proportion of Total Expenditure (current prices)

Period	General Administration	Defense	Social Services[d]	Economic Development[d]	Social Security
1930/32	37.5	15.8	23.7	15.8	7.2
1939/41	29.9	14.1	20.2	28.9	6.9
1949/51	12.6	14.8	21.3	42.8	8.5
1959/61	11.0	13.0	15.7	39.6	20.7
1969/71	14.0	11.3	18.8	28.4	27.5
1975/77	22.1	11.3	18.8	30.7	17.1

a. National, provincial, and municipal governments.
b. See note d in Appendix
c. Transfers to the business sector.
d. See note 15.

Despite the stability of the overall expenditure/GDP ratio, as can be observed in Parts B and C of Table 1, considerable variations did occur in the composition of spending. The large fluctuations in capital spending are not unexpected, given the variable nature of such outlays. Across the years public transfer payments made to persons and families rapidly increased in relative importance after the advent of general national social security schemes in the mid - 1940s. At the same time, public subsidies directed toward firms gradually lost importance. With respect to expenditures by function, those on economic development fluctuated widely, whereas those on social security grew and those on general administration decreased until late in the period.

THE "EXPLANATORY" VARIABLES AND THE MODEL

There exists a host of economic, political, and institutional/ ideological phenomena that are in simultaneous operation upon the expenditure/GDP ratio and the composition of public spending. The problem becomes one not of defining these phenomena cum concepts but of making an a priori selection based on their anticipated importance and the feasibility of collecting consistent data series to serve as proxies for such concepts.

An initial selection of 15 independent variables serving as proxies for four broad concepts was made.[5/] The concepts and their proxies are presented below:

(A) Economic Factors

1. Real GDP per capita (Y/P)
2. Imports/GDP (M/Y)
3. Exports/GDP (X/Y)
4. Foreign trade coefficient [(M + X)/Y]
5. Manufacturing sectoral share of GDP (MA/Y)
6. Agricultural sectoral share of GDP (A/Y)

(B) Monetary Factors

1. Money supply/GDP (MS/Y); MS is defined as M_1 (currency plus demand deposits).

2. Information rate (ΔIP); IP is defined as the GDP implicit price deflator.

(C) Factors Representing Public Sector Financing

1. Total tax revenues/GDP (T_t/Y)
2. Personal income tax revenues/GDP (T_p/Y)
3. Per capita personal income tax revenues (T_p/P)
4. Share of personal income taxes in total tax revenues (T_p/T_t)

(D) Institutional/Political Factors

1. President elected by popular vote or not (D_1)
2. Civilian or military president (D_2)
3. Year in which new president took office (D_3)

The real GDP per capita (Y/P) variables is both a demand and supply concept . As Y/P grows over time (i.e., as economic growth occurs) the income elasticity of demand for many public goods may be greater than unity. Real income rises generate expectations for more and better-quality public services, with the level of real per capita income representing a constraint on that demand. But growth implies that the polity is better able to finance this demand. And given a possible productivity gap between the private and public sectors and a price inelastic demand for public services, the demand for real resources will increase.

The remaining economic factors are related to the structure of the economy. The changing relative and absolute importance of the various sectors can certainly play a considerable role in shaping public expenditure

priorities and in financing those same outlays. For example, the development of the agricultural sector would imply public spending on rural access road networks, and if the sector produces exportable goods, public investment in port and transportation facilities would be required. On the other hand, the stimulation of manufacturing would require other types of public spending, including publicly provided subsidies and investment in human capital.

Although one might question the use of monetary variables as possible "determinants" of public sector spending, in the case of Argentina, which has experienced high rates of inflation and large relative price changes, inclusion of monetary factors makes good sense a priori. Abrupt and large relative price changes certainly affect the prices the public sector must pay for its own acquisitions of goods and services, thereby influencing public spending composition and shares. Moreover, rapidly changing monetary factors affect public policy regarding, for example, debt emissions and fiscal deficits. The money supply/GDP ratio is not used here as a proxy for the degree of economic development.[6/] Rather, it is used as a reflection of an increase in money supply and the subsequent repercussions on public sector financing.

Although most explanations of public expenditure growth focus on the demand variables for government goods and services, it is just as plausible (if not more so) to look at the supply side of public revenues as a constraint on spending. After all, even in the presence of budget deficits financed by running the printing presses, the principal constraint on public spending remains public (mainly tax) income. Even the demand theories implicitly incorporate the revenue restraint. Take, for example, a Borcherding-type hypothesis (see Borcherding, 1977), which explains government growth in terms of the voting behavior of public bureaucrats, who have personal interest in larger amounts of government. Additionally,

there is the argument that in a democracy (in Argentina, during civilian governments) increased public revenues can always be assigned to income redistributive programs as vote-getting or support-maintaining measures. Thus, the contention can easily be made that the equilibrium size of government is determined by its tax revenue-raising capacity.

In order to incorporate variables that somehow reflect different political and institutional situations, the final three (dummy) variables have been initially employed. Such noneconomic qualitative variables may have at least as much influence on public spending patterns as do the quantitative factors. In the end, after all, public expenditures are designed by persons and not by economic structures.

The statistical analysis was carried out via the application of a single equation model of the form:

$$\log GE_i/GDP = \log a + b_1 \log X_1 + b_2 \log X_2 + \ldots + b_n \log X_n + u$$

where GE represents either total or categorical government expenditure and $X_1 \ldots X_n$ the independent variables; note that all expenditure categories are expressed as a percentage share of GDP.

Given the large initial number of independent variable[7/], and taking into account the probability of strong correlations between some of them, a correlation matrix was used to eliminate certain variables that demonstrated high correlations. The procedure employed was as follows :

1. A correlation matrix was run between all possible independent variables.
2. In those cases in which there emerged a high correlation between two independent variables, one was selected according to its better explanatory power vis-a-vis the dependent variables. Naturally, to do this the required

regressions were run. In this fashion the number of independent variables was reduced to seven, effectively covering the four concepts previously discussed.

3. Regressions were then run for each one of the seven selected independent variables against each type of expenditure.

4. All those independent variables that were not statistically significant at the 50% level were rejected (10% in those cases in which no variable emerged at the initial 5% cut-off point).

5. Final regression runs were made that included only those variables that remained from step 4.[8/] These final coefficient estimates are found in Tables 2 and 3.

Economic factors are represented by real GDP per capita and the foreign trade coefficient, monetary factors by both proxy variables already listed, revenue factors by the tax ratio (T_t/Y) and the personal income tax share of tax revenues, and institutional/political factors by a popularly elected president (D_1). Thus, the exact specification of the regression equation becomes

$$\log GE_i/Y = \log a + b_1 \log Y/P + b_2 \log (M+X)/Y + b_3 \log T_t/Y + b_4 \log T_p/T_t + b_5 \log MS/Y + b_6 \Delta IP + b_7 D_1 + u$$

Observe that the last variable is expressed in absolute terms; in all other cases the coefficient will yield the value of the elasticity of expenditure with respect to that particular explanatory factor.[9/]

GENERAL GOVERNMENT EXPENDITURES BY ECONOMIC CATEGORY: STATISTICAL RESULTS

The outlays of the general government include the spending of the national government, all the provincial and municipal governments, energy funds, and social security trust funds; the spending of state enterprises is excluded. The expenditure totals and subtotals are defined as follows:

TABLE 2

FACTORS ASSOCIATED WITH GENERAL GOVERNMENT EXPENDITURES BY ECONOMIC CATEGORY[a]

Dependent Variable[b]	Constant	Y/P	(M+X)/Y	T_p/T_t	T_t/Y	MS/Y	ΔIP	D_1	R^2	D-W
(1) Total Expenditures	-2.333 (-9.682	-	-	-	0.237*** (3.999)	0.092** (1.763)	0.001** (1.949)	-0.054* (-1.680)	0.338	1.498
(2) Current Expenditures	-1.669 (-76.548)	0.009** (1.738)	-	-	-	-	-	-0.043(-) (-1.280)	0.073	1.310
(3) Wages and Salaries	-1.082 (-2.792)	-	-0.450*** (-3.529)	-	-	-	-0.001*** (-4.340)	-	0.441	1.244
(4) Impersonal Goods and Services	-5.247 (-2.729)	-	1.190** (2.383)	-	-0.854** (-2.152)	-	-	-	0.275	0.853
(5) Transfers to Families	-5.103 (-14.128)	0.194*** (14.319)	-	-	0.801*** (5.955)	-	-	-	0.936	0.537
(6) Capital Expenditures	-4.583 (-10.794)	-	-	-	0.589*** (3.501)	-	0.001* (1.473)	-	0.286	0.703

[a] National, provincial, and municipal governments.

[b] As a share of GDP.

* Significant at a 10% level; ** Significant at a 5% level; *** Significant at a 1% level; - Significant at less than a 10% level;

t-statistics in parentheses.

TABLE 3

FACTORS ASSOCIATED WITH NATIONAL GOVERNMENT EXPENDITURES BY FUNCTIONAL CATEGORY[a]

Dependent Variable[b]	Constant	Y/P	(M+X)/Y	T_p/T_t	T_t/Y	MS/Y	ΔIP	D_1	R^2	D-W
(7) Total Expenditures	- 3.392 (-11.393)	0.082*** (6.948)	-	-	-	0.608***	-	-	0.518	0.318
(8) General Administration Expenditures	- 1.617 (- 3.091)	-	-	-	-0.705*** (-3.437)	-	-	-	0.204	0.366
(9) Defense Expenditures	- 5.987 (-17.827)	-	-	-	-	0.755*** (6.931)	0.0002*** (3.329)	-	0.519	0.621
(10) Education Expenditures	- 3.869 (116.953)	-	-	-	-	-	-0.001(-) (-1.282)	-0.083* (-1.409	0.941	1.195
(11) Social Expenditures	- 1.941 (- 5.362)	-	-0.451*** (-3.921)	-0.001* (-1.493)	-	-	-	-0.112** (-2.095)	0.277	1.160
(12) Economic Development Expenditures	0.421 (0.555)	-	-1.355*** (-5.934)	-	-	0.270(-) (1.623)	-	-	0.439	1.227
(13) Social Security Expenditures	- 3.705 (-5.610)	0.195*** (11.887)	-0.345** (-2.398)	-	0.576*** (3.786)	-	-0.003*** (-5.806)	-	0.926	0.546

[a]Central administration, special accounts, and decentralized agencies.

[b]As a share of GDP.

*Significant at a 10% level; **Significant at a 5% level; ***Significant at a 1% level; - Significant at less than a 10% level;

t-statistics in parentheses.

	Equation Number in Table 2
General Government Total Expenditure[10/]	1
I. Current expenditures	2
A. Wages and salaries	3
B. Impersonal goods and services	4
C. Transfers to families	5
II . Capital expenditures	6

Looking first at equation 1, it is observed that four statistically significant variables "explain" one-third of the variation in the total expenditure/GDP ratio. Interestingly, no purely economic factor emerged as an explanatory variable, as the four variables represent the concepts of the supply of public revenues (T_t/Y), the degree of monetization (MS/Y), the rate of inflation (ΔIP), and the type of government (D_1).

The positive sign on the tax ratio confirms that "supply side" phenomena are at least just as important as those that operate from the demand side; that is, the principal constraint on government spending has to do with its ability to raise revenues. This conclusion can be reached despite the fact that the elasticity value (the regression coefficient) is less than one. In other words, tax revenues not only have been channeled toward expenditures but also have been used to substitute for other public financing sources (debt, nontax sources, printing press).

The direct relationship between the monetary variables and the public expenditure share of GDP apparently implies that public money creation has often been employed to finance public outlays. Given Argentina's decades-long experience with inflationary finance, this result is far from surprising. Finally, the negative sign of the D_1 variable[11/] reveals

that nonelected governments have tended toward reducing the public share of GDP . This squares well with Argentine political history. Military governments have generally arisen as a reaction to what they consider to have been the "excesses" of civilian governments; civilian governments, on the other hand, have certainly tended toward using the public budget for income redistributive and developmental objectives.

The D_1 variable emerges with the same negative sign in equation 2 as a "determinant" of current (as opposed to capital) expenditures; to reiterate, this is anticipated, for civilian governments tend to be more populist and to place greater emphasis on current needs (if only for political reasons). That real GDP per capita is a significant variable in this equation demonstrates the importance of demand forces in determining current spending-GDP shares, especially when linked to civilian governments.

Equation 3 presents two significant variables associated with the public wage and salary share of GDP. The inverse relationship between the dependent variable and the inflation rate indicates that public salaries have generally tended to lag behind general price level changes, thereby affecting the real wages of government bureaucrats. The other variable affecting wages and salaries is associated with the economic structure and its degree of openness /̲(M + X)Y̲7. The negative sign is not easily understood, but may have to do with the Argentine economic cycle. Generally, export increases have been accompanied by a rising GDP, with the private sector becoming the motor of such rises. Then balance of payments difficulties appear with subsequent economic recession. In this situation, the maintenance of a constant real level of public expenditure (due, for example, to anticyclical policy) will produce a higher expenditure/GDP ratio.

The two variables that emerge in equation 4 appear in previous equations, but in this instance they appear with different signs. That this time the degree of openness is positively associated with the impersonal goods and services share of GDP is not inconsistent with the results of equation 3. Some part of imports is destined for the public sector, and there is therefore a distinct correlation between these imports and public spending allocated to their acquisition. The inverse association between the tax ratio and the dependent variable is not readily explainable, for it is not immediately obvious why impersonal goods and services expenditures should vary inversely with tax revenues. The explanation may have to do with politics: Revenue increases are easily channeled toward wages and salaries, whereas revenue drops imply cutting back on personal services and maintaining plans for the acquisition of programmed impersonal goods and services.

The direct relationship between real GDP per capita and the transfer share of GDP as shown in equation 5 is both highly significant and completely expected. At higher real income levels most societies both demand more of the substantial income security provided by transfers and are in a better position to finance such transfers. And this supply constraint is reflected in the positive sign on the tax ratio, the second significant variable in this equation. Not surprisingly, it is this equation that generates by far the largest proportion of "explained" variation in the dependent variable.

Finally, in equation 6 the revenue constraint on capital expenditures is once again in evidence via the tax ratio. The Argentine experience is certainly congruent with the positive sign encountered here, for capital expenditures seem to have generally had a residual character; they are the first to be cut when fiscal problems arise [12/].

The positive sign on the inflation rate variable is similarly congruent. Capital outlaus react rapidly to price changes. Certain components have demonstrated a large degree of flexibility to price variations via the application of indexing formulas (especially in public works contracts) or even more directly via explicit price rises.

NATIONAL GOVERNMENT EXPENDITURES BY FUNCTIONAL CATEGORY: STATISTICAL RESULTS

Data source limitations regarding spending by functional category restricted the development of long-run functional series to the outlays of the national government and national social security funds. National government spending includes that of the central administration, the special accounts, and the decentralized agencies, but excludes that of the state enterprises and the municipal and provincial governments.[13]

The total expenditure to GDP share equation indicates a better data fit than that found under total general government expenditures (equation 1); only two statistically significant variables account for a bit more than half of the observed variations in the dependent variable. The positive signs on the Y/P and MS/Y variables emerge as anticipated, and there is no reason why their interpretation should differ from that already discussed. Real GDP per capita is a good proxy for demand (and supply) forces and recurrence has often been had to the printing presses to finance nationa l government spending.

Only one significant variable emerges from equation 8 in relation to the general administration expenditure share of GDP. The inverse reationship between the tax ratio and the dependent variable is interesting, for

it could well be indicative of economies of scale in the operation of the national government.

Given the history of military intervention in Argentina's political life, it is rather surprising that the sole "determinants" of defense spending (equation 9) turn out to be monetary variables and not the type of government. It appears as if money creation has been used to finance the military and that such financing has further fueled the fires of inflation .

A high coefficient of determination and the influence of civilian governments on education expenditures are the most outstanding features of equation 10. The education share of GDP is inversely related to military-controlled governments, indicative of other alternative spending priorities under military rule. Moreover, the inverse relationship with respect to the rate of price increase reveals that inflation is the enemy of educational spending. This ties in with a previous result for general government spending. Wage and salary payments represent the bulk of spending on education, and this same inverse relation between the inflation rate and wage and salary outlays was already noted in equation 3.

Equation 11 once again indicates, via the dummy variable, that noncivilian governments essentially tend to ignore social spending for other types of outlays or in an effort to reduce the overall role of government in the economy. The negative signs on the $(M + X)/Y$ and T_p/T_t variables are not as obviously explained, but may imply that spending in this functional category is primarily dependent upon internally generated monies. In other words, foreign trade taxes (export-import levies and exchange rate differentials) are somehow inversely related to the financing of social expenditure. Why this should be so is not at all clear.

The negative sign on the foreign trade coefficient in equation 12 can most likely be linked to the economic development strategy followed by Argentina during the entire period under analysis. As the economy became more and more closed behind high effective tariff walls, internal spending priorities gravitated toward internally generated development. That deficit spending was utilized to pursue these expenditure goals may be inferred from the positive sign on the monetization element.

The similarity between the results of equation 13 and those of equation 5 is not surprising. The social security-GDP share is a direct function of real income levels and revenue sources, thereby combining both demand and supply factors . That social security outlays are an essentially urban phenomenon can be seen in the inverse relationship with the foreign trade coefficient, which is so highly dependent on (rural) agricultural exports. And once again it is noted, via the negative sign on the inflation rate variable, that an accelerating rate of inflation is the enemy of the retired population as their real incomes tend to lag behind the rate of price increase.

CONCLUSIONS

The relative long-run stability in the Argentine public expenditure share of gross output can be explained well in terms of the foregoing analysis, for the independent variables do help in throwing a great deal of light on the historical pattern of government spending . In essence, public outlays as a proportion of GDP have maintained a rather steady secular course due to the counteracting forces embodied in the proxy variables.

As can be observed from the equations presented in Tables 2 and 3, Argentine long-term public spending patterns can be statistically related to economic, financial, and institutional/ideological factors. Whereas real per capita GDP and deficit financing of spending did tend to pull the expenditure/output ratio upward the constraints exercised by real financing (tax revenues) and by conservative, nonelected governments operated in the opposite direction. What is striking is how the equations differ as to which variables are significant. No variable emerges as statistically significant for all categories of expenditure, and the importance of a variable depends a great deal on how expenditure is disaggregated (see MS/Y in Table 2 versus Table 3).

The consistently positive signs on the real per capita GDP variable corroborate the hypothesis that the demand for more and better-quality public goods and services grows as economic growth takes place. Moreover, that same economic growth permits the generation of the revenues necessary to finance a larger public sector. Nevertheless, the will and the capacity to tax represent definite constraints on the polity's spending, despite a chronic resort to deficit financing. And here is a most important element in the Argentine public expenditure experience. Tax evasion has always been a game played by the Argentines, and the government has clearly lacked the will to implement a tax structure increasingly dependent upon direct taxation. As a result, after the 1950s the tax system reverted to ever increasing reliance on indirect taxation. Thus, there is no doubt that the inability to channel greater tax resources into public coffers has been one of the main limiting factors on public spending.

The other limiting factor to an expansion of the public sector has to do with the Argentine political process and the "military" party. The consistently inverse relationship between the D_1 variable and the

expenditure/output ratio tells a large part of the story. Whereas civilian and popularly elected administrations have tended to increase spending levels, nonelected administrations have acted in contrary fashion. There has been a definite ideological tug-of-war that has seesawed back and forth over the entire period under study.14/

One factor particular to the Argentine case merits special mention. The rate of inflation proved to be a variable both directly and inversely related to the expenditure/GDP shares. Whatever the apparent explanation in each case, there is no doubt that a rapidly increasing price level does continually and severely affect relative prices. Certainly these relative price fluctuations have, in one way or another, influenced expenditure behavior. For instance, as has been pointed out, the wages and salaries of public employees and of passive income recipients have tended to lag behind the overall price level, thereby lowering the public expenditure ratio.

APPENDIX

TOTAL GENERAL GOVERNMENT EXPENDITURES AS A PROPORTION OF GROSS DOMESTIC PRODUCT[a]

Year	Current Prices[c]	Constant Prices[d]	Year	Current Prices	Constant Prices
1930	19.75	17.87	1954	26.50	26.91
1931	21.73	18.87	1955	25.44	25.25
1932	24.98	21.25	1956	22.18	23.41
1933	23.19	20.20	1957	20.13	21.04
1934	22.50	19.50	1958	23.19	24.64
1935	21.67	18.81	1959	20.64	21.24
1936	21.17	18.46	1960	22.61	22.61
1937	20.92	17.93	1961	24.13	23.02
1938	22.28	19.50	1962	22.64	21.67
1939	26.95	23.39	1963	20.99	20.69
1940	21.89	19.06	1964	20.28	20.87
1941	21.19	18.19	1965	20.72	20.89
1942	20.63	16.95	1966	23.63	22.45
1943	20.79	17.65	1967	24.69	22.46
1944	20.23	18.04	1968	23.89	20.80
1945	23.64	20.49	1969	23.72	20.77
1946	19.90	20.64	1970	23.14	20.06
1947	23.23	23.17	1971	23.09	20.30
1948	35.42	37.58	1972	21.88	19.47
1949	28.67	30.33	1973	23.61	20.71
1950	24.57	25.16	1974	29.26	25.35
1951	23.87	23.02	1975	29.32	25.41
1952	23.50	21.21	1976	25.95	23.98
1953	24.06	22.76	1977	23.86	22.46

a. National, provincial, and municipal governments.
b. At factor cost.
c. Both the expenditure and GDP data were taken at current prices.
d. Both the expenditure and GDP data were taken at constant prices, with the latter being taken from several published sources. The expenditure constant price figures were derived by applying different available price indices to economic expenditure breackdowns. These breackdowns and the respectively applied indices were as follows:

Economic Classification	Price Index
Capital	Cost of Construction in the federal capital
Current consumption of goods and services and personal transfers	Consumer prices
Subsidies	Wholesale prices

Expenditures on the current consumption of goods and services might have been deflated by the implicit price index for consumer goods purchased by the general government. However, after 1960, this index apparently overstates the magnitude of inflation, and therefore was not utilized.

NOTES

1/ Refer to the figures given in note 4/.

2/ Two earlier efforts employing a similar methodological approach and covering the period 1900-1977 dealt only in terms of the overall public expenditure/GDP ratio. Moreover, the explanatory variables were limited to economic factors. See Mann and Schulthess (1981a) and Schulthess (1980).

3/ The importance of distinguishing between nominal and real public disbursements has been pointed out by Beck (1976, 1979). The results of carrying out just such an exercise for the Argentine case are presented in Mann and Schulthess (1981b).

4/ One might well question this affirmation of relative public disbursement stability given the role state enterprises have played, especially since the 1940s. Of course, it may be argued that the activities of state enterprises can be excluded from the definition of the public sector as the production of such enterprises is guided by private sector criteria (e.g., the profit motive). However, many of these same enterprises have depended upon general government subsidies, thereby sacrificing policy autonomy. It was not possible to obtain reliable and consistent data for state enterprises prior to 1961. Taking into account the capital spending of all state enterprises for the 1961-77 period and adding this spending to that of general government, the (current price) expenditure/GDP ratio became 29.7% in 1961, 27.2% during 1969-1971, 32 5% over 1973-1975, and 29.5% in 1976-1977. At least for the years after 1960, the addition of state enterprise capital outlays does not alter the already observed pattern followed by general government spending.

5/ The exclusion of demographic variables was intentional, for most of these problable demographic factors (growth rates, age structures, urban-rural breakdowns) change little (if at all) from year to year. Moreover, they are usually interpolated between census years, thereby not being generated from actual measurement. Therefore, due to their "unreliability" and constancy, they were not included in this time-series analysis; they would be much more appropriate in intercountry cross-section analyses.

6/ Although this ratio has often been used as an indicator of economic development, as Chandavarkar (1977) has pointed out, empirical work employing such a variable leaves much to be desired. An increase in the ratio could merely mean a money supply rise that had originated in already monetized economic sectors. By his own estimates, the gross product generated by nonmonetized sectors in Argentina was only 2% of the total.

7/ The variables Y/P and ΔIP were also originally included and lagged one year with respect to public expenditures.

8/ These results were generated via the use of the statistical package titled Time-Series Processor (TSP), version 3.3. All equations were corrected for first-degree linear autocorrelation using the Cochrane-Orcutt method, which was part of the package.

9/ The inflation variable (ΔIP) is defined as $(P_1-P_0)/P_0$, where P_1 = this year's price index level and P_0 = last year's level. Thus, the inflation variable is really dlog P=dP/P, and it behaves as if it were a logarithmic variable. Moreover, as this variable is defined in terms of percentage changes, a regression coefficient of 0.001 can be important and statistically significant (see Tables 2 and 3).

10/ The total includes subsidies, for which no separate equation is presented.

11/ D_1 is defined as equal to one for those years in which the government was not popularly elected and as zero when it was.

12/ This statement is supported by other work done on the Argentine budget and actual spending process; see Giuliodori (1969) and Treber (1977).

13/ The functional categories include the following general items: (1) general administration —executive, legislative, and judicial branches, foreign relations, police and internal security, interest on the public debt; (2) defense —army, navy, and air force; (3) education —all levels of public schooling and cultural activities; (4) social — public health and sanitation, education, social welfare (excluding social security payments). Note that education spending is presented by itself and as a component of this category; (5) economic development—agriculture, energy, mining, electricity, roads, communications, other transport, tourism.

14/ During the 1930-1977 span popularly elected presidents were in office 60% of the time, the remaining 40% accruing to nonelected presidents.

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